

**Systems for an Interservice Exercise Measurement  
and Feedback System: List of Brigade Critical  
Combat Tasks for the Air Ground Training  
Feedback System**

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**August 1996**

**United States Army Research Institute for the Behavioral and Social Sciences**


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# LIST OF BRIGADE CRITICAL COMBAT TASKS FOR THE AIR GROUND TRAINING FEEDBACK SYSTEM

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**LIST OF BRIGADE CRITICAL COMBAT TASKS  
FOR THE  
AIR GROUND TRAINING FEEDBACK SYSTEM**

**PURPOSE**

This document is the third in a series of interim reports in support of Army Research Institute Contract MDA903-92D0075. The purpose of this study is to identify the critical synchronizing aspects of Close Air Support and develop a training and assessment vehicle to assist in enhancing the utilization of Close Air Support operations for both ground and air forces.

**INTRODUCTION**

As the Airland Battle doctrine continues to evolve, the need for enhanced coordination between the ground and air forces becomes ever more critical. To meet this requirement the military has instituted a number of organizational reforms, such as unified commands and an emphasis on staff training in interservice operations. The process, though, is continuous and the requirement for enhanced training at the tactical level is necessary.

For the past several years interservice air-ground training has been conducted at all the US Army's Combat Training Centers (CTCs). The exercise scenarios at all these locations provide adequate maneuver and air space to provide realistic training to both ground and air forces. Due to the size of the exercise area and the instrumentation capability, the National Training Center supported by Air Warrior I, provides a valuable source of information regarding the tactical application of Close Air Support in a mid to high intensity combat environment.

This study was designed to analyze the utilization of Close Air Support and develop training feedback tools which would provide a quantifiable basis for further training resource requirements. Information derived from this system could provide valuable insights into such areas as force structure and weapons mix, tactical procedures and techniques, and the methods and amount of required training. In addition, the data acquired from the field would be organized into a common database that would facilitate access to the information for all services as well as assist in development of future interservice training programs.

The first step in the development of this system is the identification of critical activities, or tasks, necessary for the successful application of CAS. This report addresses the methodology for determining those actions and the resultant task list.

## METHODOLOGY

The procedures used to develop the Close Air Support task lists are discussed below. The doctrinal and operational sources of the tasks are identified by document and agency. The tactical echelon upon which this study is focused is discussed as is the functional organization for CAS command and control. The step by step process for developing critical combat tasks is outlined as is the organization of the tasks.

### Source Documents, Agencies and Commands:

Two areas were identified as primary sources: Doctrinal literature and staff cadre from a variety of Army and Air Force commands and schools.

Literature, generally in the form of Field Manuals and Standard Operating Procedures, were reviewed for critical tasks and sequence of activities and events. Information from these sources provided the foundation for the subsequent collection process. The literature source list that follows shows the primary documents available. It does not include classified documents or a myriad of supplements, circulars, and other supporting papers.

TACM 2-1	Tactical Air Operations (Ch 4)
TACM 3-1 VI	General Planning and Employment Considerations
TACM 3-1 V8	Forward Air Controller
TACR 55-45	Tactical Air Force Headquarters and the Tactical Air Control Center
TACR 55-46	The Tactical Air Control System (TACS) - Air Support Operations Centers (ASOC) and Tactical Air Control Parties (to be replaced by ACC55-8)
TACP 50-20 (FM 90-21)	JAAT Multi-Service Procedures for the Joint Attack Air Attack Team Operations
TACP 50-22	Tactical Air Control Party/Fire Support Team Close Air Support Operations
TACP 50-28 (FM90-20)	J-Fire Multi-Service Procedures for the Joint Application of Fire Power
TACP 50-36	Joint Concept and Procedures for Close Air Support in the Rear Battle
TACP 50-39 (FM 90-17)	Beacon Multi-Service Procedures for Radar Beacon Operations
TACP 55-51	TACP Hand Book (will be replaced by MCM 3-3)
MCM 3-3, V8	Mission Employment Tactics for Airborne Forward Air Controller (AFAC) and Tactical Air Controp Party (TACP)
AFM 1-1	Basic Aerospace Doctrine of the United States Air Force
FACT BOOK	355th Wing Combat Liaison
FM 71-100	Division Operations
FM 100-5	Operations
FM 100-26	Air Ground Operations System
FM 1-111	Aviation Brigade
FM 44-31	Tactics, Techniques, and Procedures: Avenger Squad Operations
FM 44-46	Manpads Platoon and Section Operations
FM 100-103	Army Airspace Command and Control in a Combat Zone
FM 71-3	Armor and Mechanized Infantry Brigade

Structured interviews were conducted with a wide variety of Army and Air Force commands, schools, and other appropriate agencies. The purpose of these discussions was to determine how the system was structured, the key players and their actions, and how all the players envisioned the application of CAS. One critical aspect of these interviews was the determination of coordinating or synchronization points between all the forces involved.

Instructor Staff	Air Ground Operations School (AGOS), Hurlburt AFB
Selected Staff Members	Tactical Air Control Party School, Hurlburt AFB
Army Coordinator	Blue Flag, Hurlburt AFB
Program Manager	ACMI, Eglin AFB
Selected Staff Members	Air-Forward Air Controller School, Davis Monthan AFB
Selected Staff Members	AO-10 School, Davis Monthan AFB
Selected Staff Members	549th Joint Training Squadron (Air Warrior I), Nellis AFB
Selected Staff Members	57th Test Group/PRO-10, Nellis AFB
Selected Cadre	Det 1, 549 Joint Training Squadron (Raven Team), National Training Center
Selected Staff Members	Army Aviation School, Ft. Rucker
Project Officer	Army Air Traffic Control Agency, Ft. Rucker
Contractor Staff	Air Net Facility, Ft. Rucker
Selected Staff Members	School of Command Preparation, Ft. Leavenworth
Selected Staff Members	Air Force Element, CAC-T, Ft. Leavenworth
Selected Staff Members	Joint Programs Office, Air Combat Command, Ft. Leavenworth
Selected Staff Members	Concepts and Doctrine Directorate, C&GSC, Ft. Leavenworth
Selected Staff Members	Fire Support Combined Arms Doctrine, Ft. Sill
Selected Staff Members	Combined Arms and Tactics Department, Ft. Bliss
Instrumentation Officer	Training Analysis and Feedback, National Training Center
Selected Cadre	National Training Center, Ft. Irwin
Selected Cadre	Marine Air-Ground Training Center, Twentynine Palms
CAS Project Officers	Air Land Sea Application Center, Langley AFB

### **The operational echelon:**

Close Air Support encompasses operations from theatre to company and includes a wide variety of other components (air defense, rotary wing assets, fire support, etc.) at each echelon. While each level is important to the overall effort and the synchronization of all these elements is critical, the scope of activity is much too broad for the purposes of this study. At the same time, none of these factors can be arbitrarily dismissed or ignored.

One other consideration was the utility of the training product to be developed by this study. If it was created for an echelon too low, it would miss many of the necessary integrating actions required to synchronize CAS. If the focus was too high, many of the important nuts and bolts activities would be left out. For these reasons, the initial focus of this study was within divisional boundaries and airspace. However, the division was still too high an echelon to allow a detailed examination of the tactical integration and synchronization of CAS.

Will all these factors in mind, the echelon of brigade was selected as the base organization. Brigades routinely integrate a wide variety of supporting arms into a synchronized maneuver plan. The brigade's proximity to the Forward Line of Troops (FLOT) is such that they are the highest echelon able to physically manage CAS. Finally, this is the level of organization trained at the CTCs.

### **Tactical organization:**

There are three operational components of Close Air Support: The Tactical Air Control Party (TACP), the Air Forward Air Control (AFAC), and the attack aircraft. For purposes of this study only the command and control elements (the TACP and AFAC), which are primarily responsible for ensuring CAS synchronization and effectiveness, are addressed.

The TACP consists of two elements: The Air Liaison Officer (ALO) and the Enlisted Terminal Attack Controller (ETAC). TACP teams are routinely found at the battalion, brigade, and division where the ALO serves as a special staff member. He is, therefore, an integral part of the units planning and preparation process from beginning to end and the TACP, as a whole, represents the critical link between the supporting CAS and the supported unit.

The AFAC, however, does not arrive in the area of operations until just prior to the arrival of attack aircraft. He will have had a broad operational briefing and intelligence update prior to his arrival and will rely on the local TACP to provide more specific information on the immediate tactical situation. Even so, it is the AFAC who will normally provide the direct command and control over the attack aircraft as they arrive on station.

This relationship between the TACP and the AFAC, with two independent yet parallel planning and preparation phases, causes two separate but parallel sets of activities. As a result, task lists will have to reflect this organizational and operational dendretic.



### **Task development:**

Development of critical combat tasks for Close Air Support was a four step process. First, a doctrinal task list was developed based on training literature. Second, an operational, or experience based, task list was created from interviews with subject matter experts. Third, all the tasks were collated into a single list. Finally, a review of all candidate tasks was conducted by a panel of subject matter experts.

An extensive study of doctrinal literature was performed and an initial list of candidate tasks was produced. This list included activities from multiple echelons and functional areas, all of which had a direct impact on the availability and utilization of CAS. Elements of information included air defense systems, indirect fires, unmanned air vehicles (UAVs), rotary wing aircraft, and a variety of airspace management controls and restrictions designed to provide some measure of safety to incoming and outgoing aircraft.

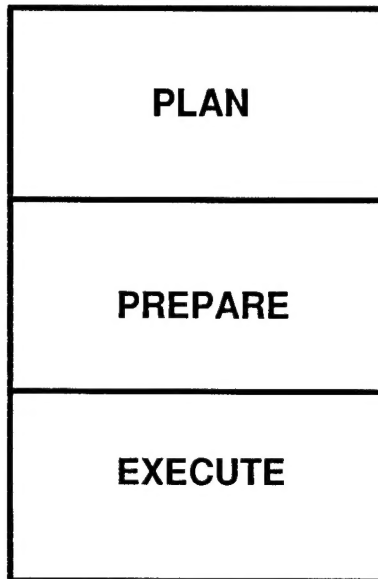
Second, groups of subject matter experts from numerous agencies and commands were interviewed and a list of tasks was derived from each. Once again, the spectrum of activities covered multiple echelons and functional areas, however, the interviews produced a level of criticality that was not readily apparent in the literature. This was expected and the SME interviews provided a solid basis for development of the operational, or experienced based, task list.

Once all the independent tasks were identified, they were merged into a single master candidate list. During this process each task was fleshed out with appropriate elements of information to provide specific actions necessary to accomplish the task. This master list was then used as the foundation for further SME interviews to refine both the tasks and elements of information.

The final step was a formal task by task review of the candidate list by a panel of Army and Air Force subject matter experts. This process resulted in some tasks being deleted as tasks and downgraded to elements of information for another task. In other cases, elements of information were upgraded to independent tasks. In many tasks the elements of information were refined or modified in an effort to ensure clarity and completeness. The list of tasks developed from this process appears at the end of this report.

**Organization of the data:**

In order to organize the tasks into a manageable structure which would serve to link both air and ground actions, the Battleflow Framework was used. This framework was developed from the Unit Performance Measurement System (Lewman, 1988) and represents the mission flow of activities and events for ground forces.



**Figure 1.**

While the timeline differs between air and ground forces, the plan-prepare-execute formula is still applicable because the event sequence still corresponds to the operational flow of a mission. Further, the framework offers a ready link to higher and lower ground echelons and an integrating mechanism for tying CAS specific actions into the overall event sequence of the supported ground force. By amplifying and enhancing this configuration, it is possible to identify the logical steps which must occur during a mission and place each battle task into the contextual critical path of the organizational input-process-output activities. In this manner, task clusters and linkages as well as dependencies become readily apparent.

Once each independent task flow chart is developed they can then be linked both horizontally and vertically. Such a linkage would provide multiple but interactive task flow charts which can be constructed to operate in a fashion similar to a network of electronic circuit boards. This represents the conceptual framework within which CAS battle tasks were organized.

# CLOSE AIR SUPPORT TASK LIST

## GROUND COMPONENT

## AIR COMPONENT

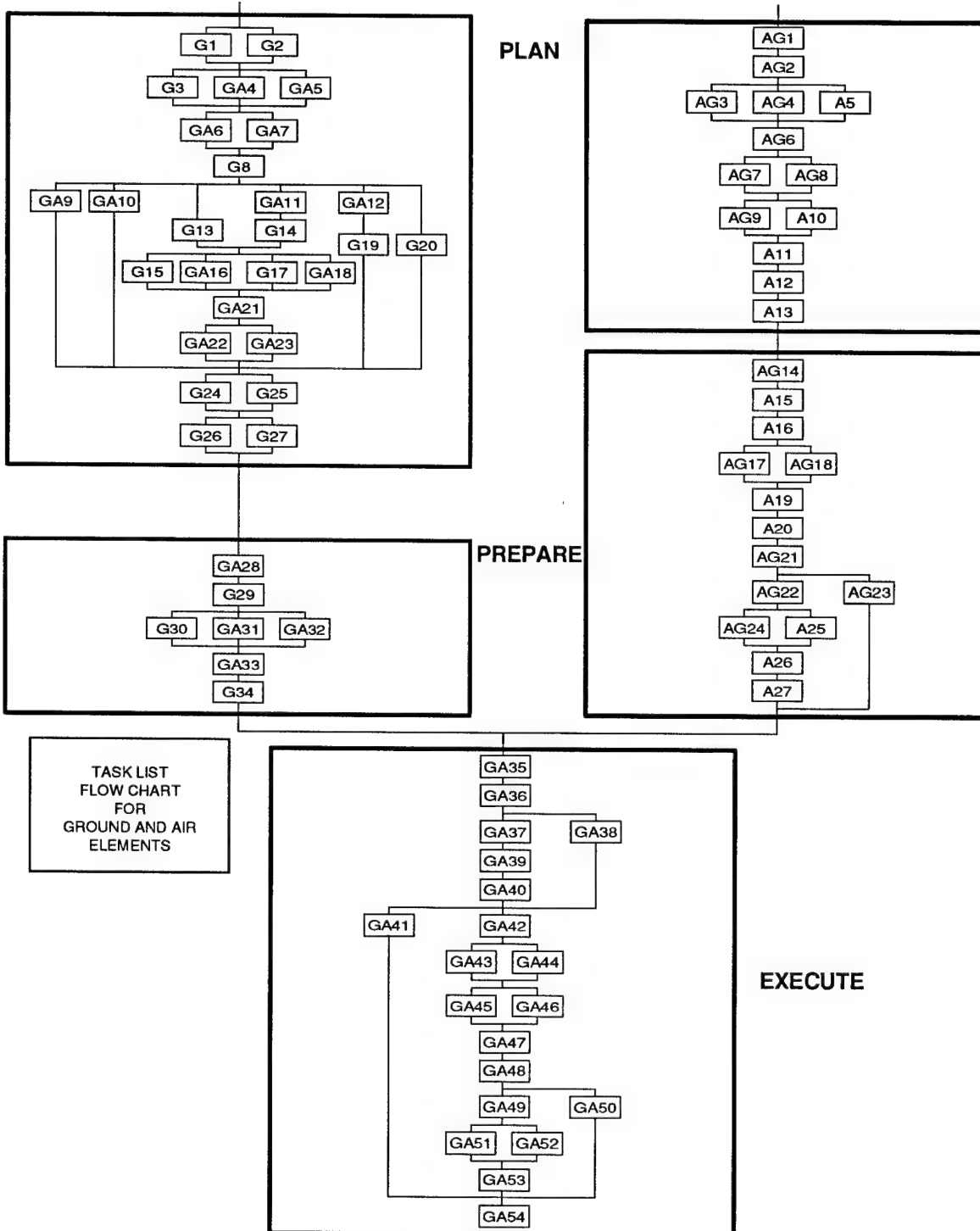
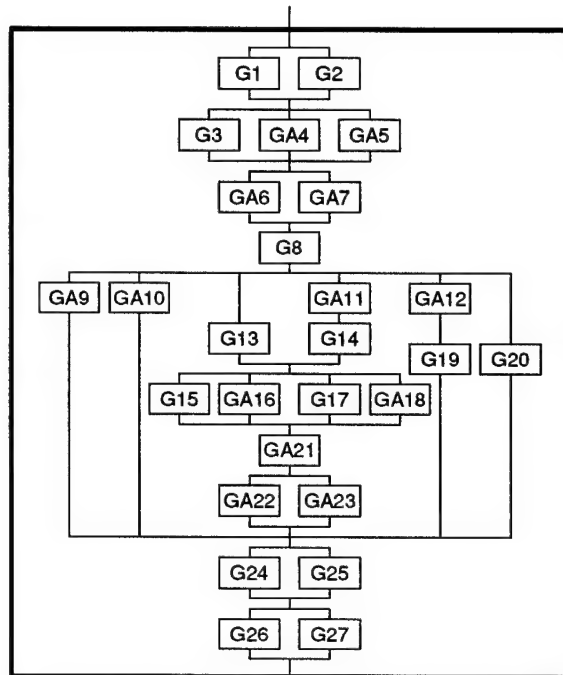


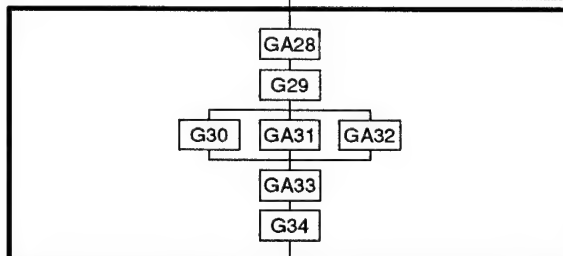
Figure 2.

# GROUND COMPONENT

PLAN



PREPARE



EXECUTE

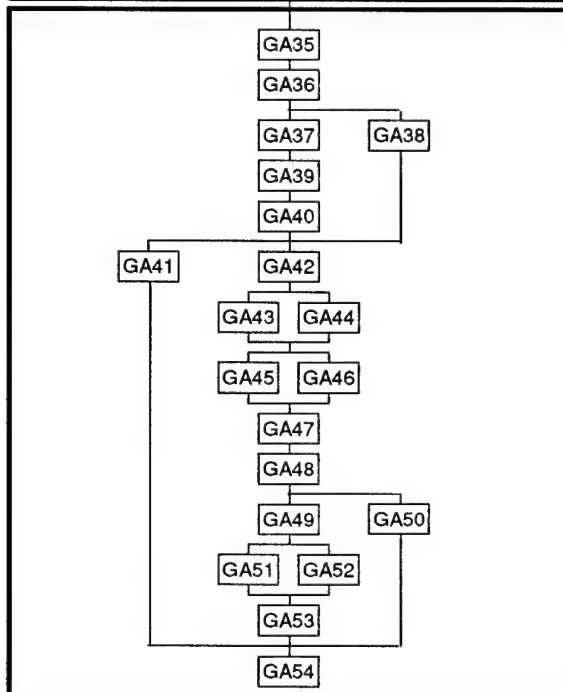


Figure 3.

# GROUND COMPONENT

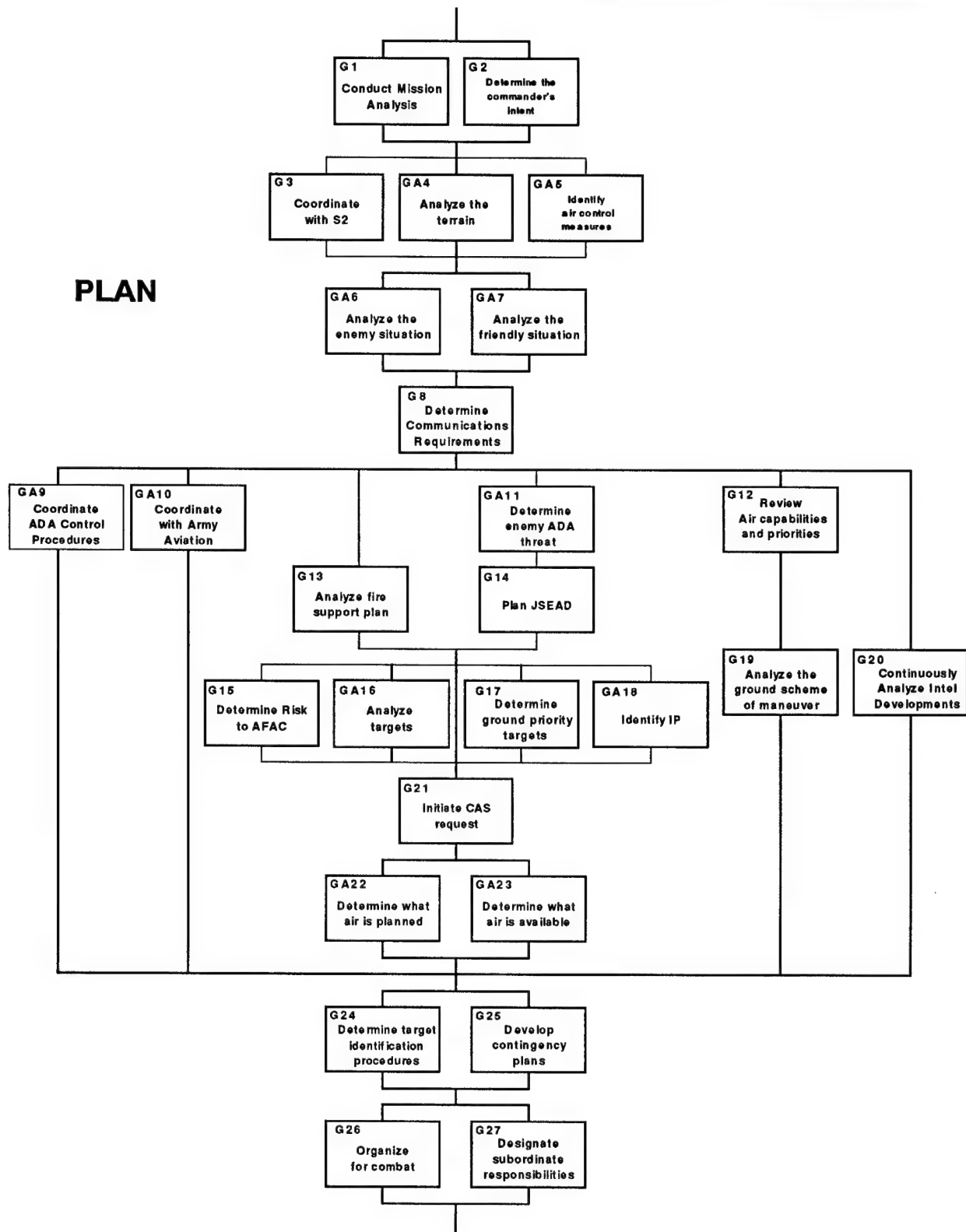


Figure 4.

# **TACP (TACTICAL AIR CONTROL PARTY) BRIGADE**

## **PLANNING**

- G1. Conduct mission analysis** **MCM 3-3, Vol VIII**
- a. Determine specified tasks
  - b. Determine implied tasks
  - c. Determine area of operations (sector/zone)
  - d. Determine available time
- G2. Determine the commander's intent** **MCM 3-3, Vol VIII**
- Understand the purpose of the mission
- G3. Coordinate with S2** **MCM 3-3, Vol VIII**
- a. Identify all available information and intelligence on the following:
    - 1) Enemy forces
    - 2) Terrain
    - 3) Weather
  - b. Ensure continuous flow of new intelligence to the Air Liaison Officer
  - c. Ensure continuous flow of combat information from aircraft to the S2
  - d. Determine what air intelligence assets are available
- GA4. Analyze the terrain** **MCM 3-3, Vol VIII**
- a. Determine ground avenues of approach
    - 1) Choke points
    - 2) Obstacles
  - b. Identify air avenues of approach
  - c. Determine the impact of weather on air operations
  - d. Identify physical control features
  - e. Determine the impact of the sun angle on air operations
  - f. Determine the elevation of targets in feet

**GA5. Identify air control measures**

MCM 3-3, Vol VIII; ATP 40; FM 100-103

- a. Confirm coordinating altitude (from above ground level (AGL))
- b. Determine restrictions and constraints
- c. Identify the following areas:
  - 1) High density airspace control zoned (HIDACZ)
  - 2) Restricted Operations Zones (ROZ)
  - 3) Air ingress/egress routes
  - 4) Airspace Coordination Areas (ACA)
  - 5) Contact Points/Initial Points (CP/IP)
  - 6) Helicopter air corridors
  - 7) Minimum Risk Routes (MRR)
  - 8) Engagement Areas

**GA6. Analyze the enemy situation**

MCM 3-3, Vol VIII

The following enemy information is determined:

- 1) Size
- 2) Disposition
- 3) Location
- 4) Organization
- 5) Potential courses of action

**GA7. Analyze friendly situation**

MCM 3-3, Vol VIII

The following information is identified:

- 1) FLOT (Forward Line of Troops)
- 2) Location of forward elements
- 3) Location of indirect fire assets
- 4) Helicopter areas of operation (AO)
  - a) Routes
  - b) Lift
  - c) Attack
- 5) UAV (Unmanned Air Vehicle) AO
- 6) Location of the FSCL (Fire Support Coordination Line)

**G8. Determine communication requirements** MCM 3-3, Vol VIII; TAC Pam 50-20

- a. Identify locations which provide continuous communications with ground and air forces.
- b. Determine communications requirements with the following:
  - 1) Ground forces
  - 2) Air forces
  - 3) Army aviation
- c. Identify ground re transmission requirements
- d. Develop air communication plan
  - 1) HAVE-Quick
  - 2) TOD
  - 3) Mickey
  - 4) Chattermark

**GA9. Coordinate Air Defense Artillery control procedures** TAC Pam 50-20

- a. Identify Air Defense Artillery (ADA) activation procedures
- b. Identify ADA change of status procedures
- c. Identify air ingress/egress routes
- e. Identify notification procedures for friendly air on station

**GA10. Coordinate with Army Aviation** TAC Pam 50-20; FM 1-111

- a. Identify responsibilities
- b. Identify constraints/limitations
  - 1) Altitude
  - 2) Routes
- c. Determine capabilities
- d. Identify engagement areas
- e. Identify critical locations
  - 1) Landing zones
  - 2) Forward Arming and Refueling Points (FARP)
  - 3) Battle Positions
  - 4) Observation positions (AOPs)
- f. Identify Joint Air Attack Team (JAAT) specific considerations

**GA11. Determine enemy ADA threat** MCM 3-3, Vol VIII; TACP Pam 50-20

The following enemy information is identified:

- 1) Type
- 2) Location
- 3) Capabilities
- 4) Expected actions
  - a) Movement
  - b) Stationary



**G12. Review air capabilities and priorities**

TAC Pam 50-20; FM 6-20

- a. Brief ground commander on air limitations
- b. Brief ground commander on air capabilities
- c. Reaffirm commander's intent
- d. Nominate appropriate targets
- e. Target priorities conform to the following criteria:
  - 1) Aircraft survival
  - 2) Support ground maneuver plan
- f. Target priorities conform with the ground fire support plan

**G13. Analyze fire support plan**

MCM 3-3, Vol VIII; FM 6-20

- a. The following information is identified:
  - 1) Location of indirect fire assets
    - a) Artillery guns
    - b) Multiple Launched Rocket Systems
    - c) Mortars
  - 2) Gun-target lines
  - 3) Movement sequence
    - a) Timing
    - b) New locations
  - 4) Planned targets
  - 5) Sequence of engagement
  - 6) Maximum ballistic altitudes
  - 7) ACAs
  - 8) JAAT considerations
- b. Recommend appropriate target sequence

**G14. Plan JSEAD (Joint Suppression of Enemy Air Defenses)**

TAC Pam 50-20

- a. Determine ADA targets
- b. Determine ADA target locations
- c. Determine type of suppression
- d. Determine type of JSEAD available
- e. Integrate JSEAD with adjacent units

**G15. Determine risk to Airborne Forward Air Controller** MCM 3-3, Vol VIII

- a. Determine risk to Airborne Forward Air Controller (AFAC) during the following:
  - 1) Target observation
  - 2) Target marking
  - 3) Holding pattern
- b. Identify AFAC position in relation to the following:
  - 1) Enemy threat
    - a) Distance
    - b) Capabilities
    - c) ADA
  - 2) Friendly
    - a) ADA
    - b) Gun target lines
    - c) Air routes
- c. Confirm appropriateness of the following:
  - 1) Altitude
  - 2) Holding pattern area

**GA16. Analyze targets**

TAC PAM 50-20; FM 6-20

- a. Identify locations
- b. Determine target type
- c. Determine the best method to defeat enemy targets
  - 1) Identify appropriate JSEAD requirements
  - 2) Identify necessary suppression measures
- d. Determine the impact of weather on air operations
- e. Confirm engagement criteria

**G17. Determine ground priority targets**

MCM 3-3, Vol VIII

- a. Identify target type
- b. Integrate target with threat to friendly forces
  - 1) Determine risk to air assets
  - 2) Determine risk of fratricide

**GA18. Identify Initial Point**

MCM 3-3, Vol VIII

- a. Identify location
  - 1) Appropriate distance from threat
  - 2) Easy to identify
- b. Determine holding altitude
- c. Confirm deconfliction of IP from gun target lines
- d. Confirm communication capabilities

**G19. Analyze ground scheme of maneuver**

MCM 3-3, Vol VIII; TAC Pam 50-22

The following information is identified:

- 1) FLOT
  - a) Battle positions
  - b) Location of elements forward of the FLOT
- 2) Engagement areas
- 3) Maneuver restrictions
  - a) Boundaries
  - b) Axis of advance
  - c) Limitations
- 4) Control measures

**G20. Continuously Analyze Intelligence Developments**

TACM 3-1 VI

Integrate combat information from all sources

- 1) JSTAR
- 2) U2
- 3) Reconnaissance
- 4) Ground assets
- 5) Other available assets

**G21. Initiate Close Air Support (CAS) request**

FM 90-21

- a. Supports ground scheme of maneuver
- b. Supports fire support plan
- c. Conforms to intelligence estimate

**GA22. Determine what air is planned**

MCM 3-3, Vol VIII

The following information is determined:

- 1) Type of aircraft
- 2) When the aircraft will arrive
- 3) How long aircraft will remain on station
- 4) Aircraft capabilities
  - a) Munitions
  - b) Electronic Warfare (EW)
- 5) Projected sortie allocation

**GA23. Determine what air is available**

MCM 3-3, Vol. VIII

The following information is identified:

- 1) Type of aircraft
- 2). When the aircraft will be available
- 3) How long aircraft will be available
- 4) Aircraft capabilities
  - a) Munitions
  - b) EW
- 5) Air priority of effort in the AO
- 6) Projected tanker support
- 7) Projected Airborne Warning and Control System (AWACS)
- 8) Projected fighter coverage
- 9) Projected suppression coverage
  - a) JSEAD
  - b) Weasel

**G24. Determine target identification procedures**

TAC Pam 50-28; FM 6-20

- a. Determine target marking procedures
- b. Determine the utility of using the following target marking methods
  - 1) Laser
  - 2) Smoke
  - 3) Tracers
  - 4) Description
- c. Identify easy to locate terrain features

**G25. Develop contingency plans**

TACM 3-1 VI, FM 6-20

- a. Identify secondary targets
- b. Identify alternate engagement areas
- c. Prepare for second echelon engagement

**G26. Organize for combat**

MCM 3-3, Vol. VIII

- a. Establish chain of command
- b. Identify locations for TACP elements
  - 1) Provide for observation of target area
    - a) AFAC
    - b) GFAC
    - c) Flight lead control
  - 2) Locations provide uninterrupted communication with air and ground forces
- c. Determine position of Air Liaison Officer within the command group
- d. Identify CAS final control authority

**G27. Designate subordinate responsibilities**

MCM 3-3, Vol. VIII

- a. Confirm responsibilities for battalion TACPs
- b. Confirm required actions of the Brigade TACP
- c. Ensure any special instructions are disseminated to all subordinate elements
- d. Confirm that all subordinates are capable of fulfilling their assigned responsibilities

# GROUND COMPONENT

**PREPARE**

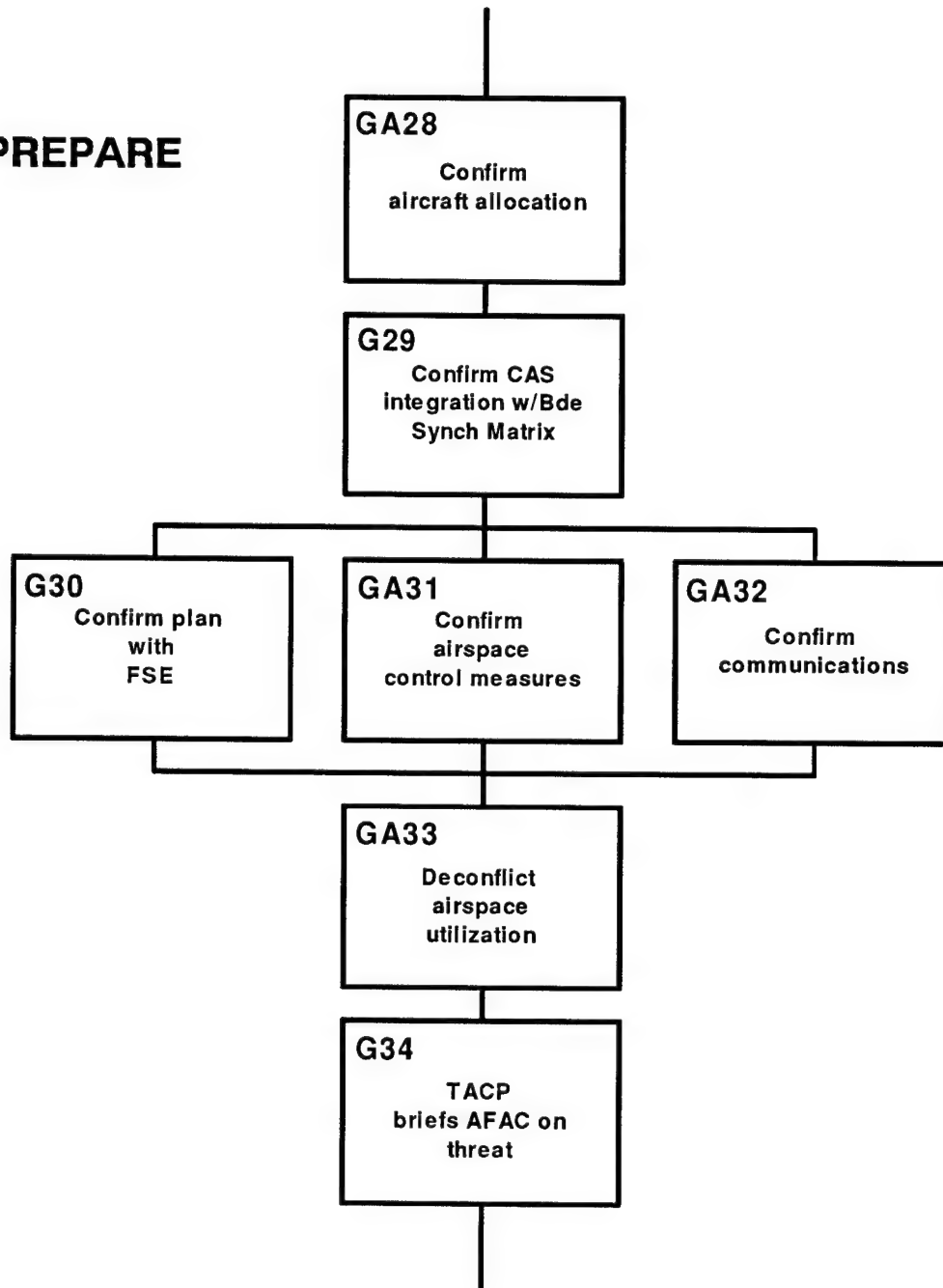


Figure 5.

## **PREPARATION**

### **GA28. Confirm aircraft allocation**

MCM 3-3, Vol. VIII; TACM 55-46

The following information is confirmed:

- 1) Type of aircraft
- 2) When the aircraft will arrive
- 3) Munitions
- 4) Number of sorties

### **G29. Confirm CAS integration with Brigade Synch Matrix**

FM 6-20

- a. CAS plan conforms with Decision Support Template
- b. CAS is synchronized with scheme of maneuver
  - 1) Timing
  - 2) Command or event driven sequence
- c. CAS is synchronized with fire support plan
  - 1) Timing
  - 2) Command or event driven sequence
  - 3) Targets
- d. CAS is synchronized with Army Aviation
  - 1) Timing
  - 2) Battle positions
  - 3) Engagement areas
- e. Plan for continuous CAS missions

### **G30. Confirm plan with Fire Support Element**

FM 6-20

- a. Confirm that CAS plan is synchronized with indirect fire plan
  - 1) Sequence of attack
  - 2) Timing
  - 3) Engagement areas
  - 4) Targets
- b. Ensure that masking of indirect fires is minimized
- c. Review CAS target list for appropriateness
- d. Identify coordination considerations with Army Aviation

### **GA31. Confirm airspace control measures**

MCM 3-3, Vol. VIII; TACR 55-46

- a. Identify any changes to initial plan
- b. Identify local airspace restrictions for the following:
  - 1) Areas
  - 2) Altitude
  - 3) Time

**GA32. Confirm communications**

MCM 3-3, Vol. VIII; TAC Pam 50-20

Confirm communications capability with the following:

- 1) TACP
  - a) HAVE-Quick
  - b) Authentication
- 2) Air forces
- 3) Army aviation
  - a) Authentication

**GA33. Deconflict airspace**

TAC Pam 50-28; FM 100-103

- a. Plan minimizes potential fratricide situations
- b. Plan minimizes the masking of fires for all elements
- c. Plan reaction to aircraft ingressing and egressing the AO
- d. Confirm that all the following assets are operating in concert:
  - 1) CAS
  - 2) Helicopters
    - a) Attack
    - b) Lift
    - c) Scout
  - 3) Indirect fires
    - a) Artillery
    - b) Mortars
    - c) Naval
  - 4) ADA
  - 5) UAV

**G34. Brief AFAC on threat**

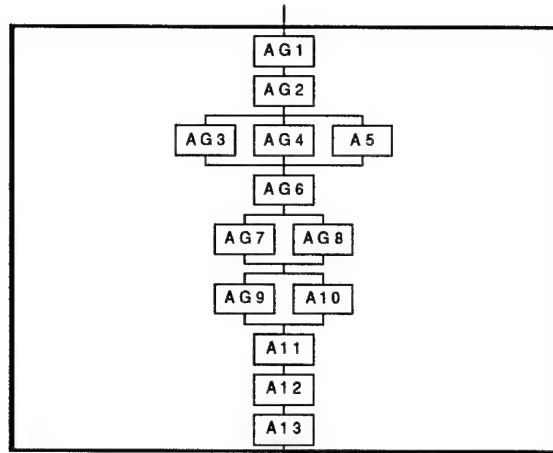
MCM 3-3, Vol. VIII

- a. Enemy forces
  - 1) Location
  - 2) Disposition
  - 3) ADA
- b. Weather

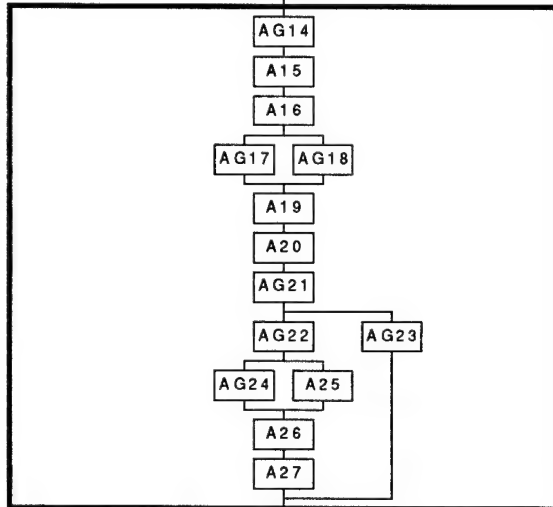


# AIR COMPONENT

PLAN



PREPARE



EXECUTE

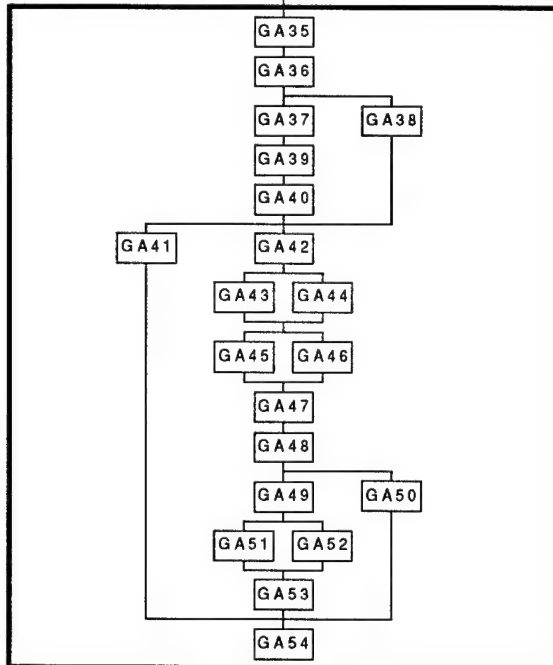


Figure 6.

# AIR COMPONENT

## **PLAN** (Pre-Flight)

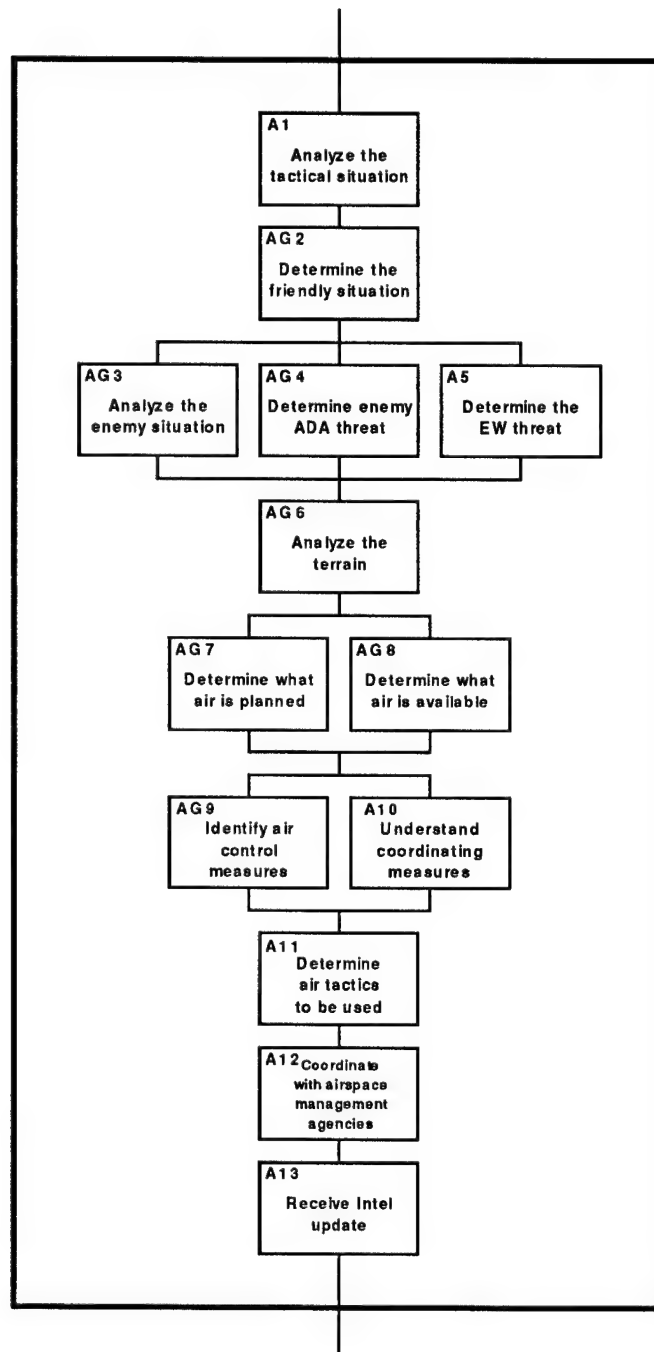


Figure 7.

# **AFAC (AIR FORWARD AIR CONTROLLER)**

## **PLAN**

*(Pre-flight)*

**A1. Analyze the tactical situation**

MCM 3-3, Vol. VIII

- a. Determine ground forces mission
  - 1) Offensive
  - 2) Defensive
- b. Determine purpose/intent of ground mission
- c. Determine air forces mission

**AG2. Determine the friendly situation**

MCM 3-3, Vol. VIII

The following information is identified:

- 1) FLOT
- 2) Location of forward elements
- 3) Location of indirect fire assets
- 4) Helicopter AO
- 5) UAV AO
- 6) Location of FSCL (Fire Support Coordination Line)

**AG3. Analyze the enemy situation**

MCM 3-3, Vol. VIII

The following enemy information is determined:

- 1) Size
- 2) Disposition
- 3) Location
- 4) Organization
- 5) Potential courses of action

**AG4. Determine enemy ADA threat**

MCM 3-3, Vol. VIII; TACP Pam 50-20

The following enemy information is identified:

- 1) Type
- 2) Location
- 3) Capabilities
- 4) Expected actions
  - a) Movement
  - b) Stationary

**A5. Determine the EW threat**

MCM 3-3, Vol. VIII

- a. Determine potential impact of friendly EW
- b. Determine scope of enemy EW
- c. Determine how to neutralize enemy EW
- d. Identify measures to overcome enemy jamming

**AG6. Analyze the terrain**

MCM 3-3, Vol. VIII

- a. Determine ground avenues of approach
  - 1) Choke points
  - 2) Obstacles
- b. Identify air avenues of approach
- c. Determine the impact of weather on air operations
- d. Identify physical control features
- e. Determine the impact of the sun angle on air operations
- f. Determine the elevation of targets in feet

**AG7. Determine what air is planned**

MCM 3-3, Vol. VIII

The following information is determined:

- 1) Type of aircraft
- 2) When the aircraft will arrive
- 3) How long aircraft will remain on station
- 4) Aircraft capabilities
  - a) Munitions
  - b) EW
- 5) Projected sortie allocation
- 6) Projected tanker support
- 7) Projected AWACS
- 8) Projected fighter coverage
- 9) Projected suppression coverage
  - a) JSEAD
  - b) Weasel

**AG8. Determine what air is available**

MCM 3-3, Vol. VIII

The following information is identified:

- 1) Type of aircraft
- 2) When the aircraft will be available
- 3) How long aircraft will be available
- 4) Aircraft capabilities
  - a) Munitions
  - b) EW
- 5) Priority of effort in the AO

**AG9. Identify air control measures**

MCM 3-3, Vol. VIII

- a. Confirm coordinating altitude (from AGL)
- b. Determine restrictions and constraints
- c. Identify the following areas
  - 1) HIDACZ
  - 2) ROZ
  - 3) Air ingress/egress routes
  - 4) ACAs
  - 5) CPs/IPs
  - 6) Helicopter air corridors
  - 7) MRR
  - 8) Engagement areas

**A10. Understand coordinating measures**

MCM 3-3, Vol. VIII

- a. Confirm refueling capability
- b. Identify the location of holding areas
- c. Determine available on station time
- f. Confirm engagement constraints

**A11. Determine air tactics to be used**

MCM 3-3, Vol. VIII

- a. Tactics are appropriate to threat
  - 1) High threat-low altitude
  - 2) Low threat-high altitude
- b. Tactics are appropriate to mission
- c. Tactics are appropriate to terrain and weather

**A12. Coordinate with airspace management agencies**

MCM 3-3, Vol. VIII;

- a. Confirm assigned area of operations TACM 3-1 V8
- b. Determine EW situation
- c. Confirm radar monitoring capability
- d. Confirm ADA situation
  - 1) Enemy
  - 2) Friendly
- e. Determine echelon specific restrictions
- f. Coordinate with Air Support Operations Center (or Airborne Battlefield Command and Control Center as alternate)

**A13. Receive Intelligence update**

TACM 3-1 V8

- a. Update given prior to arrival in area of operations
- b. Update includes latest information on area of operations

# AIR COMPONENT

## **PREPARE**

(On Station)

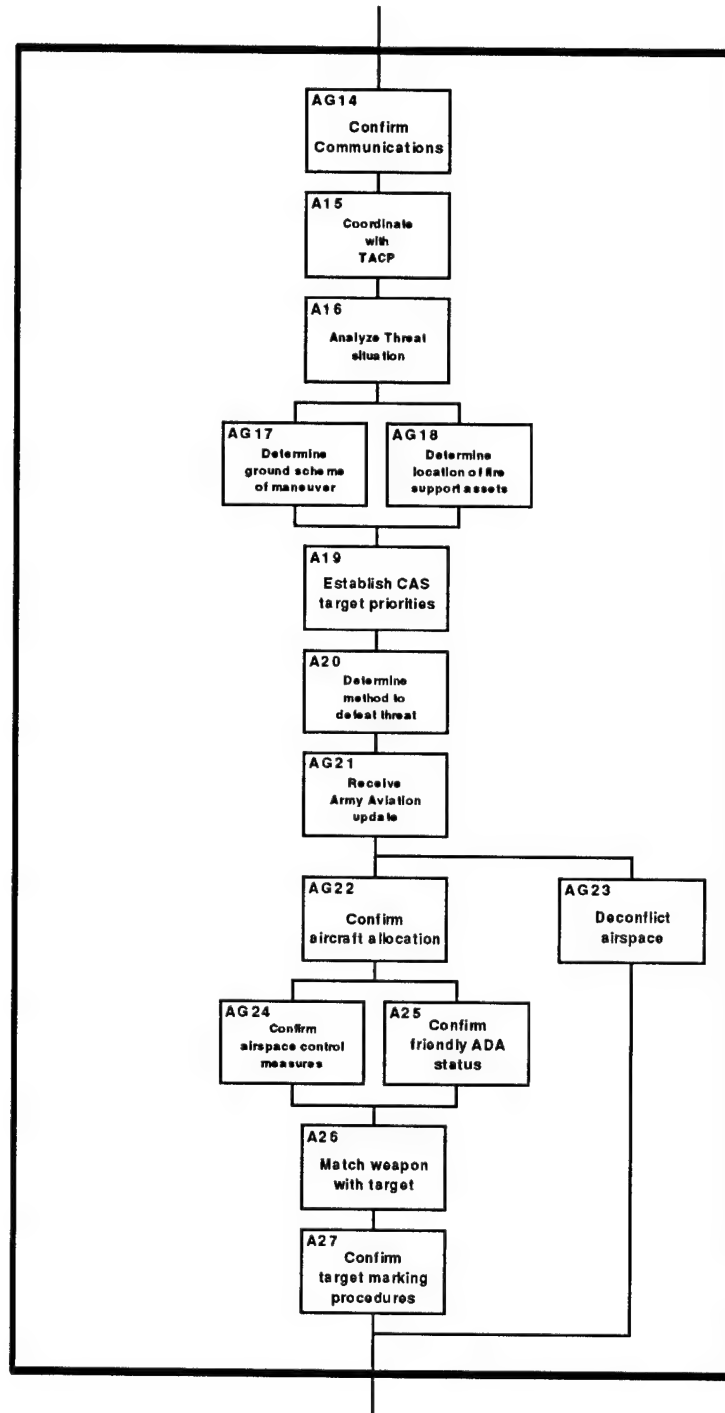


Figure 8.

## **PREPARE**

***(On Station)***

### **AG14. Confirm communications**

**MCM 3-3, Vol. VIII**

Communications are established with the following:

- 1) TACP
  - a) HAVE-Quick
  - b) Authentication
- 2) Air forces
- 3) Army Aviation
  - a) Authentication

### **A15. Coordinate with TACP**

**TAC Pam 50-22; TAC Pam 50-20**

- a. Receive update from TACP
  - 1) Latest CAS information
  - 2) Latest tactical intelligence
  - 3) Ground tactical situation
  - 4) Location of TACP
  - 5) Confirm friendly ADA status
  - 6) Update on current enemy ADA threat
- b. Update TACP on air observations

### **A16. Analyze Threat Situation**

**MCM 3-3, Vol. VIII**

- a. Determine the best method to defeat targets
- b. Determine the impact of weather on air operations
- c. Determine methods to suppress enemy ADA

### **AG17. Determine ground scheme of maneuver**

**TAC Pam 50-22**

- a. Identify FLOT
- b. Identify engagement areas
- c. Identify maneuver restrictions
  - 1) Axis of advance
  - 2) Boundaries
  - 3) Limitations
- d. Identify location of elements forward of the FLOT

**AG18. Analyze targets**

MCM 3-3, Vol. VIII

- a. Identify location
- b. Determine target type
- c. Confirm engagement criteria
- d. Identify final control authority for each target
- e. Determine target elevation (in feet)

**A19. Establish CAS target priorities**

FM 6-20

- a. Target priorities conform to the following criteria:
  - 1) Support ground maneuver plan
  - 2) Aircraft survival
- b. Target priorities conform with the ground fire support plan

**A20. Confirm JSEAD plan**

MCM 3-3, Vol. VIII

- a. Verify JSEAD requirements
- b. Verify planned suppression measures

**AG21. Receive Army Aviation update**

TAC Pam 50-22

- a. Identify responsibilities
- b. Identify constraints/limitations
  - 1) Altitude
  - 2) Routes
- c. Confirm capabilities
- d. Confirm engagement areas
- e. Identify critical locations
  - 1) Landing zones
  - 2) FARPs
- f. Determine method of authentication between helicopters and CAS

**AG22. Confirm aircraft allocation**

MCM 3-3, Vol. VIII; TACM 55-46

The following information is confirmed:

- 1) Type of aircraft
- 2) When the aircraft will arrive
- 3) Munitions
- 4) Number of sorties



**AG23. Deconflict airspace**

TAC Pam 50-28; FM 100-103

- a. Plan minimizes potential fratricide situations
- b. Plan minimizes the masking of fires for all elements
- c. Plan reaction to aircraft ingressing and egressing the AO
- d. Confirm that all the following assets are operating in concert:
  - 1) CAS
  - 2) Helicopters
    - a) Attack
    - b) Lift
    - c) Scout
  - 3) Indirect fires
    - a) Artillery
    - b) Mortars
    - c) Naval
  - 4) ADA
  - 5) UAV

**AG24. Confirm airspace control measures**

MCM 3-3, Vol. VIII; TACR 55-46

- a. Identify any changes to initial plan
- b. Identify local airspace restrictions for the following:
  - 1) Areas
  - 2) Altitude
  - 3) Time

**A25. Confirm friendly ADA status**

MCM 3-3, Vol. VIII; FM 100-103

- a. Verify current ADA status
- b. Verify procedures to change ADA status

**A26. Match weapon with target**

MCM 3-3, Vol. VIII

- a. Ensure that planned targets are matched with the most appropriate weapon system
- b. Confirm that munitions support scheme of maneuver
- c. Sequence attack to conform to established target priorities
- d. Sequence attack to conform to fire support plan

**A27. Confirm target marking procedures**

TAC Pam 50-28

- a. Verify marking procedures
- b. Confirm the utility of using the following target marking methods
  - 1) Laser
  - 2) Smoke
  - 3) Tracers
  - 4) Description
- c. Verify terrain features for ease of identification

# AIR/GROUND

## EXECUTION

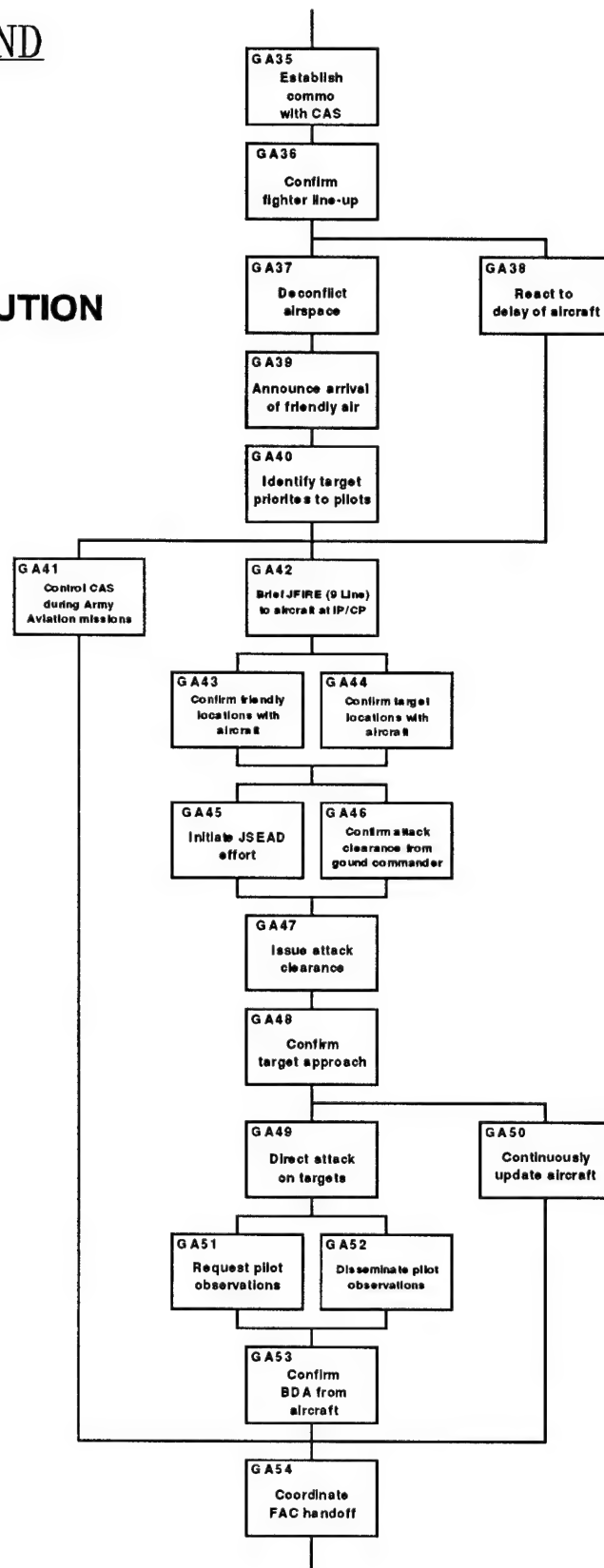


Figure 9.

## **EXECUTION**

*(Cyclic)*

### **GA35. Establish communications with CAS**

TAC Pam 50-28; TAC Pam 50-20

- a. Confirm communications with incoming CAS
  - 1) Establish communications with fighters
    - a) Authentication
    - b) Activate Chattermach (alternate frequency) plan
- b. Continuous communications are maintained for the following:
  - 1) CAS and FAC
  - 2) FAC and TACP
  - 3) TACP and command group
- c. Army Aviation maintains communication with the following:
  - 1) Command group
  - 2) TACP
  - 3) FAC (if JAAT)

### **GA36. Confirm Fighter line-up**

TAC Pam 50-22

- a. Call sign
- b. Mission number
- c. Ordnance and fusing
- d. On station time (playtime)
- e. Abort code

### **GA37. Deconflict airspace**

TAC Pam 50-28

- a. Shift or lift indirect fires
- b. Shift other air assets
  - 1) Helicopters
  - 2) UAVs
- c. Update ADA status
- d. Establish CAS holding points
- e. Prepare to stack fighters

### **GA38. React to delay of aircraft**

TAC Pam 50-28

- a. Confirm new time
- b. Determine changes in ground situation
- c. Confirm targets
- d. Develop new targets
- e. Activate contingency plans

- GA39. Announce arrival of friendly air** MCM 3-3, Vol. VIII
- a. AFAC Notify TACP
  - b. TACP notify command group
- GA40. Identify target priorities to pilots** TAC Pam 50-22
- a. Ensures that pilots understand target priorities
  - b. Ensures that pilots understand CAS attack sequence
- GA41. Control CAS during Army Aviation missions** TAC Pam 50-20
- a. confirm call signs for all aircraft
  - b. Confirm JFIRE/JAAT targets
  - c. Confirm target locations for:
    - 1) CAS
    - 2) Army Aviation
    - 3) Indirect fires
  - d. Confirm target marking procedures
- GA42. Brief JFIRE (9 Line) to aircraft at IP/CP** MCM 3-3, Vol. VIII
- a. Briefing follows prescribed format
  - b. CAS aircraft have current information on the following:
    - 1) Targets
    - 2) Friendly situation
    - 3) Hazards
      - a) ADA
      - b) Enemy
      - c) Indirect fires
- GA43. Confirm friendly locations with aircraft** TAC Pam 50-22; MCM 3-3, Vol. VIII
- a. Pilots can identify FLOT
  - b. Pilots can identify location of elements forward of the FLOT
  - c. Pilots are aware of other aircraft in the area
  - d. Pilots understand the danger close (1000 meters) criteria
- GA44. Confirm target locations with aircraft** TAC Pam 50-22; MCM 3-3, Vol. VIII
- a. Ensure that CAS aircraft can identify the targets
  - b. Designate targets:
    - 1) By grid
    - 2) From known terrain feature
    - 3) By marking designator

**GA45. Initiate JSEAD effort**

MCM 3-3, Vol. VIII

- a. Execute prior to CAS attack
- b. Confirm targets
- c. Confirm method of attack
  - 1) CAS
  - 2) Army Aviation
  - 3) Indirect fires
- d. Confirm effectiveness of attack

**GA46. Confirm attack approval from ground commander**

TAC Pam 50-28

Ensure ground commander is aware of the following:

- 1) Target type
- 2) Target location
- 3) Time of attack
- 4) Munitions

**GA47. Issue attack clearance**

MCM 3-3, Vol. VIII

- a. Identify final authority
- b. Confirm abort code
- c. Confirm type of clearance
  - 1) Depart IP
  - 2) On Final
  - 3) Flight Lead Control

**GA48. Confirm target approach**

MCM 3-3, Vol. VIII

Ensure that the following are confirmed by both air and ground forces:

- 1) Air corridor
- 2) Attack altitude
- 3) Attack timing

**GA49. Direct attack on targets**

TAC Pam 50-28

- a. Execute JSEAD
- b. Direct CAS to targets
- c. Identify targets for aircraft
  - 1) Smoke
  - 2) Laser
  - 3) Geographic

**GA50. Continuously update aircraft**

TAC Pam 50-28; TAC Pam 50-20

- a. Anticipate ground maneuver speed
- b. Continuously give aircraft known and probable locations of enemy forces
- c. Continuously give aircraft locations of friendly forces
- d. Continuously update aircraft on the ground tactical situation

**GA51. Request pilot observations**

MCM 3-3, Vol. VIII

- a. Determine size of enemy forces
- b. Determine enemy disposition
- c. Determine type of enemy force
- d. Identify movement

**GA52. Disseminate pilot observations**

MCM 3-3, Vol. VIII

All pilot tactical observations are immediately passed to the following:

- 1) The S2
- 2) The S3
- 3) The commander
- 4) Other aircraft

**GA53. Determine Battle Damage Assessment**

TAC Pam 50-22; MCM 3-3, Vol. VIII

- a. Identify friendly aircraft losses
- b. Identify enemy losses
  - 1) Personnel
  - 2) Equipment
  - 3) Location

**GA54. Execute FAC handoff**

TAC Pam 50-28; TAC Pam 50-22; MCM 3-3, Vol. VIII

- a. Designate FAC responsibilities (in cases of multiple FACs)
- b. Update incoming FAC on situation
- c. Ensure continuous and unimpeded CAS support
- d. GFAC prepared to assume direct control of aircraft